

Airports

Where and What
Kind of Development?

Since 1949  **Landrum & Brown**



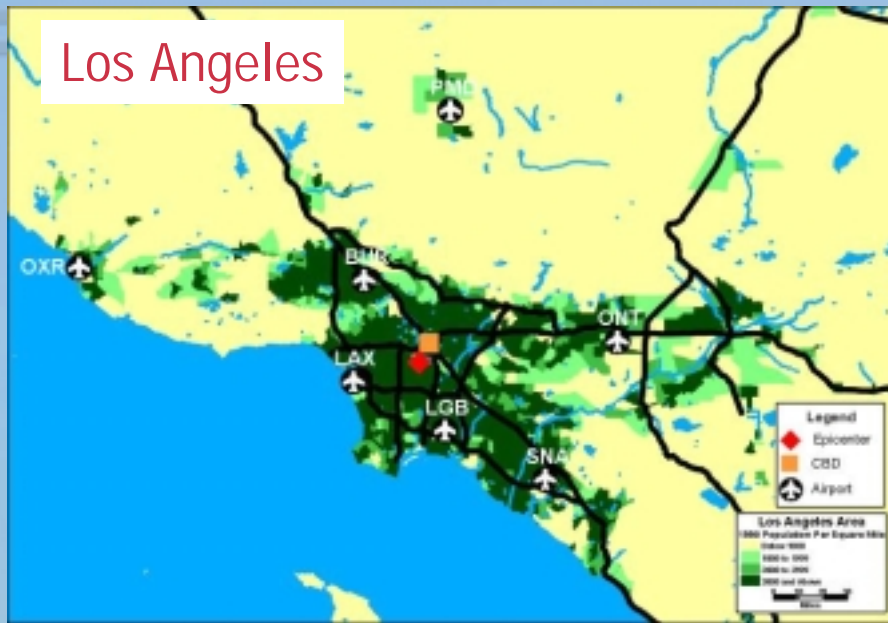
IN A MARKET DRIVEN AVIATION SYSTEM, UNDER A FIRST COME FIRST SERVED OPERATING PREMISE, PASSENGER AND SHIPPER DEMANDS WILL LARGELY DETERMINE THE ANSWERS TO **WHERE DEVELOPMENT IS NEEDED.**

- **Air travel is chosen over other modes of transportation because it is convenient, in terms of time and cost:**
 - In competing airport markets, when a comparable choice of destinations, flight frequency and fare is available, the primary determinant of the traveler's decision to use an airport is accessibility
 - ● intraregionally expressed as access convenience or ground travel time to the airport;
 - ● interregionally as total trip travel time and convenience.
 - This characteristic of air travel demand also determines the airlines' preferred locations for providing air service absent facility constraints or policy limitations.

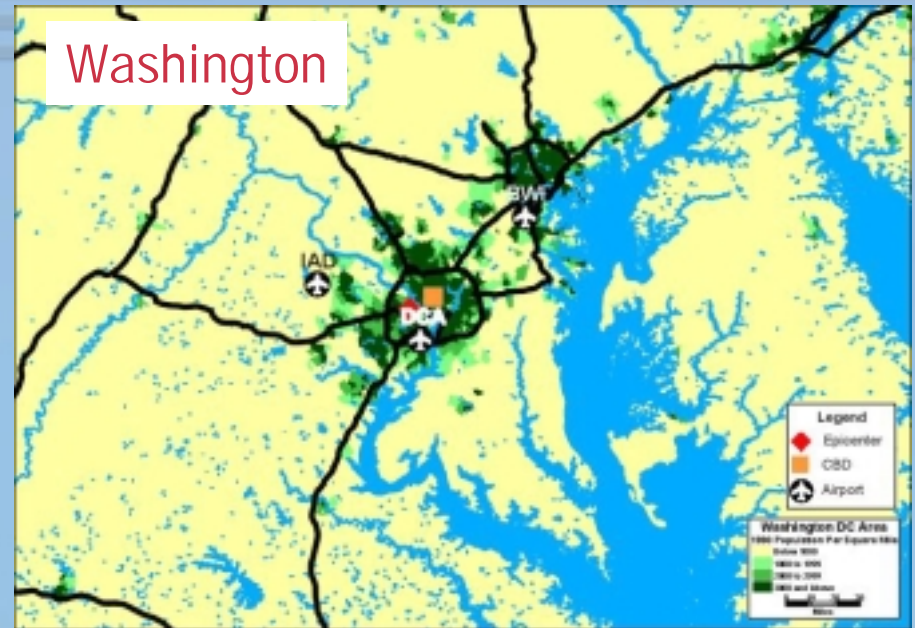
CONCENTRATION

- **Aviation activity within the U.S. system has been and will remain highly concentrated at the largest airports in major urban areas where capacity investments are needed most and most difficult to obtain:**
 - In 1998 35% of passengers and 21% of commercial aircraft operations were handled at the Top 10 airports;
 - The Top 50 Airports served 80% and 56% of passengers and operations respectively in 1998;
 - These concentrations have retained virtually identical over the last 30 years before and after deregulation.
- **Passenger and Cargo demand within the major urban areas also is and will remain highly concentrated and will likely remain so.**
 - Passenger densities per sq. mile for four of these major urban areas served by multi-airport systems (New York, Washington, Chicago, and LA) are illustrated in Exhibit I. In each , the primary airports are in high density demand areas.

Los Angeles



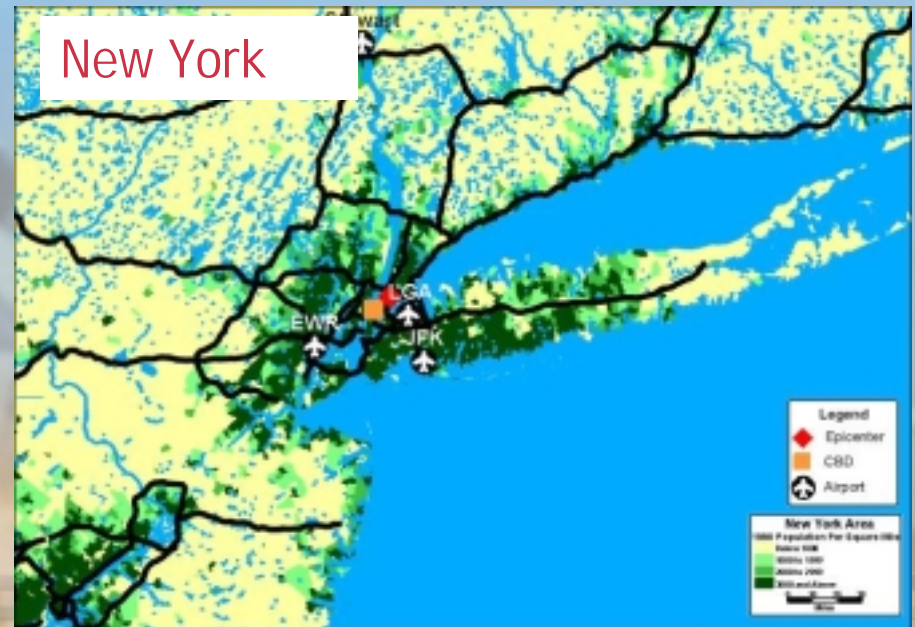
Washington



Chicago



New York



CONCENTRATION

- The sprawling 9,500 sq. mile LA Region illustrated in Exhibit II, is currently served by 7 commercial service airports, **4 that pretend to such a role, and 2 others that should play a role but may never do so.** As depicted in Exhibit III, in LA demand is concentrated geographically as is the pattern in most metropolitan areas.
 - 50% of the O&D passengers are concentrated in just 5% of the Region's geographic area.
 - 25% are concentrated around LAX in less than 2% of the area.
- **This concentration of demand, in part, reflects the distribution of frequent fliers (less than 10% of passengers who generate almost 45% of airline ticket revenues) as well as regional population, employment and income distributions.**

Los Angeles Regional Airport System



Exhibit II

Existing Distribution of Total Los Angeles Region Domestic O&D Passenger Demand

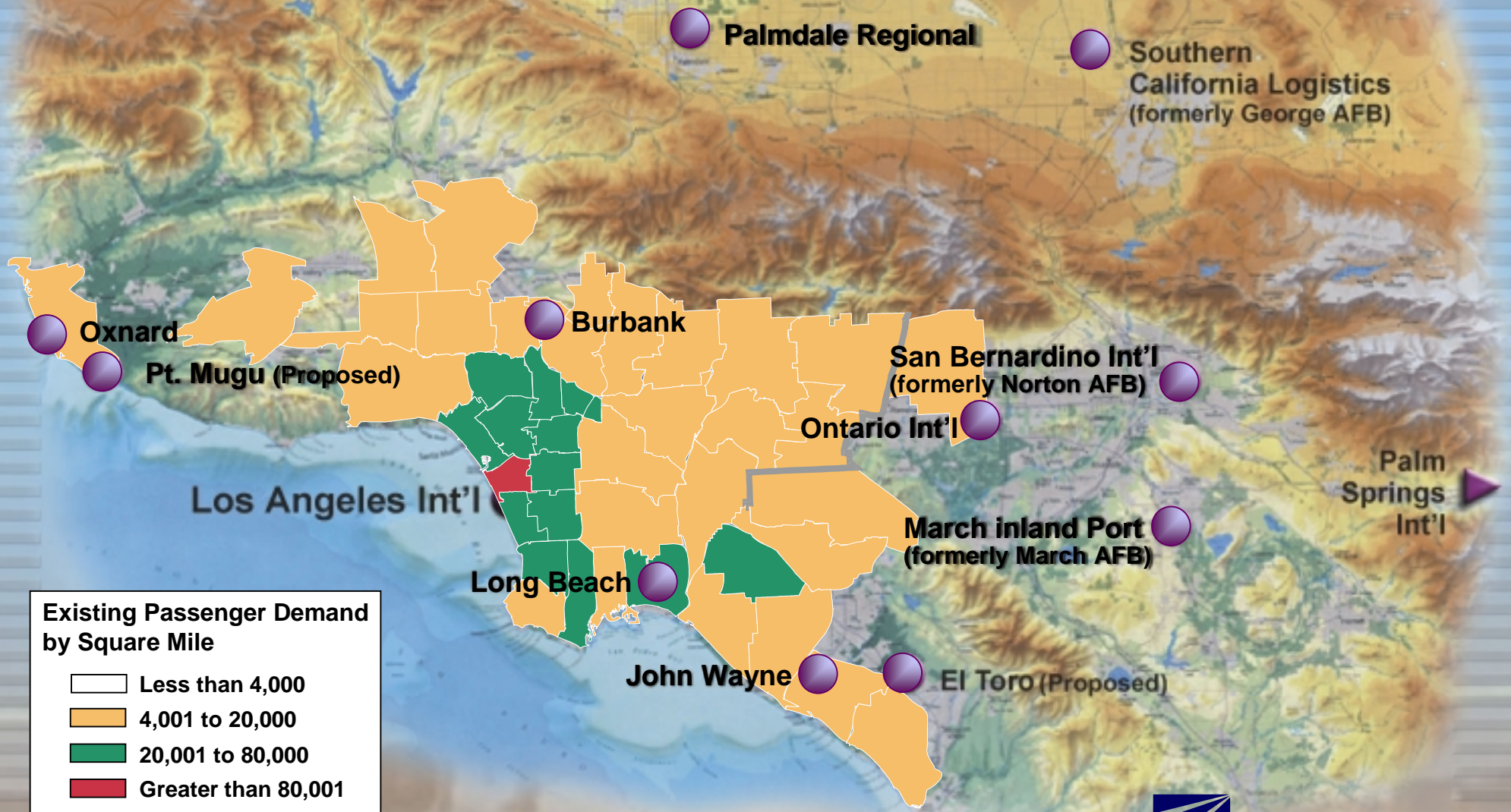


Exhibit III

CONCENTRATION

- Not surprisingly LAX is readily accessible (convenient to) the highest demand density areas. As depicted in Exhibit IV, 1/3 of total regional air travelers are within 30 minutes travel time of LAX and ½ are within 60 minutes. Only policy restricted Long Beach Airport comes close to this accessibility in the LA area.
- Airports that fall in or are readily accessible to the red, green, and yellow shaded areas are the ones where capacity is most meaningful.
- Reflecting the concentrations of demand, virtually all major U.S. airports are located within 20 miles of their regional CBD's in proximity to the core of the urban regions they serve. Primary and secondary airports in several of the major metropolitan areas are reflected in Exhibit V.
- THIS TELLS US WHERE FACILITIES ARE NEEDED NOW, AND THE UNDERLYING SOCIO-ECONOMIC PATTERNS CHANGE LITTLE OVER TIME.

1994 Airport Travel Time Zone (60 Minutes Accessibility)

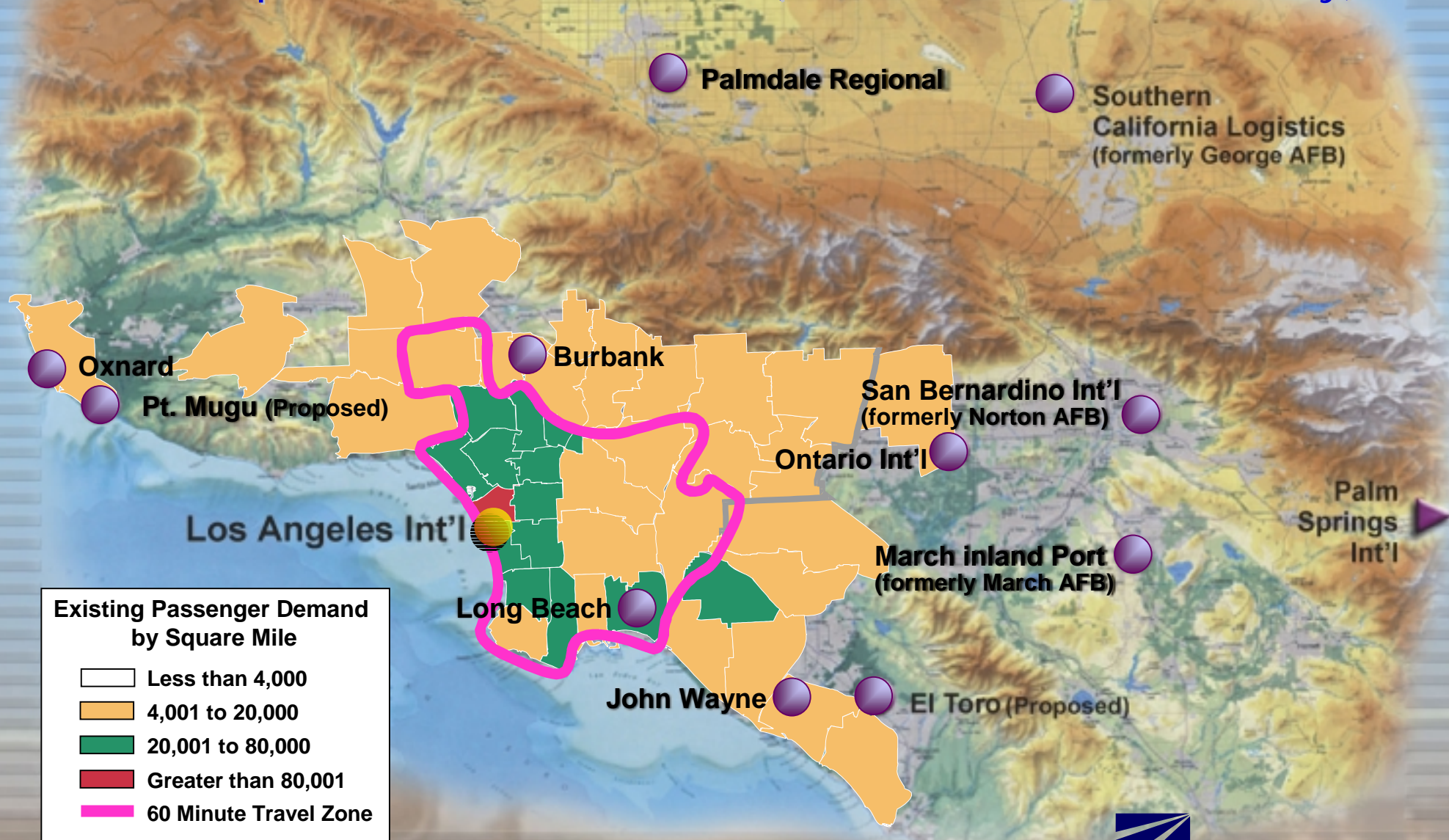


Exhibit IV

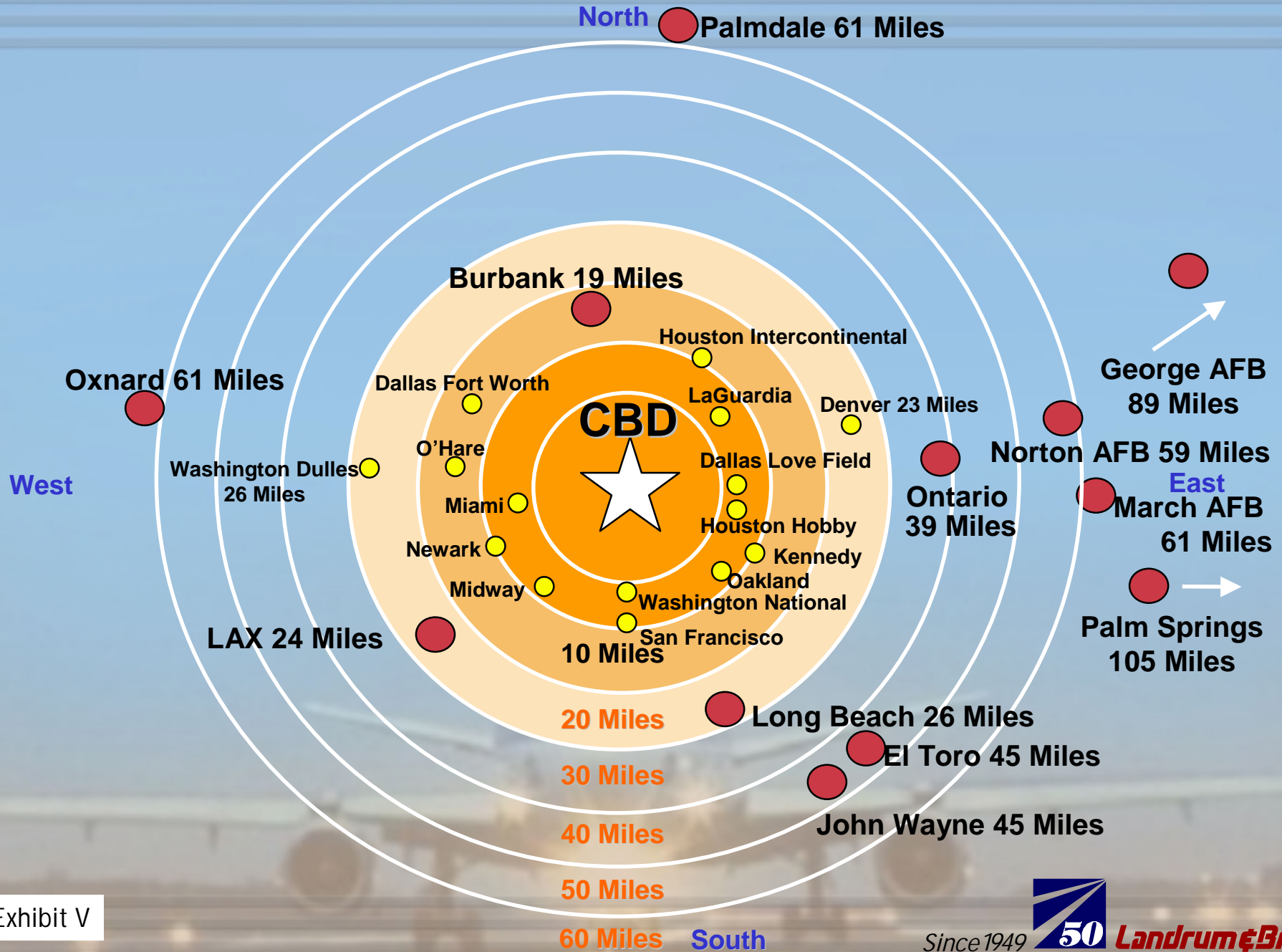


Exhibit V

CAPACITY

- **The U.S. Commercial Aviation System has considerable capacity except in the largest and most congested urban areas.**
 - Traffic flow management techniques tend to disperse delays away from these areas, thus hiding the true magnitude of the large urban area problem, and increasing the perception that smaller airports have delay problems.
 - General aviation has capacity everywhere except at the largest major commercial airports. However, it serves relatively few passengers and may have undue influence over aviation policy because of the large volume of operations.
- **Because they can only be located less accessibly on the urban fringe, new airports have not been a significant force in the provision of new capacity where it is most needed.**
 - In the last 3 decades only Dulles, Dallas and Denver have been developed and each was the only game in town with closure or severe use restrictions imposed on other local commercial airports. Unless your community or airport name starts with “D” you likely won’t see a new airport: the economic and political barriers are just too daunting.
 - Super-ports (the old way-port idea) aren’t the answer because they don’t enhance passenger/shipper convenience or airline economic return.

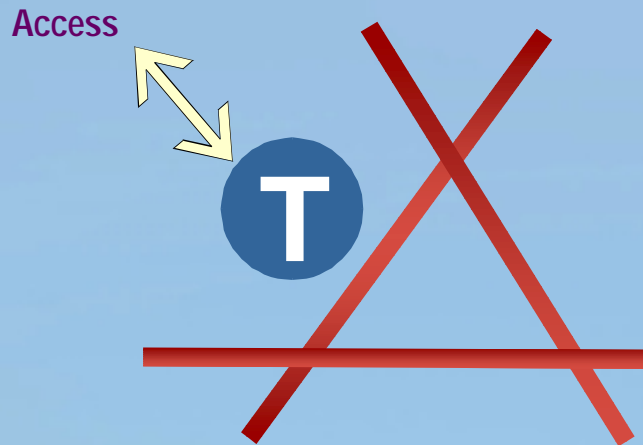
CAPACITY

- **Military airport conversion for commercial passenger use only makes sense when the site has a ready-made market in its proximity that has a need for an additional or new airport.**
 - Well-located military airfields need to be recognized as unique capacity assets that ought to be preserved for long-range needs. (Don't ever let El Toro be developed for office buildings, but who needs Grissom AFB in rural Indiana for anything except growing corn?)
 - Perhaps the greatest opportunity of base closures lies not in re-use of the concrete but in re-use of the airspace. Certainly anything that reduces or makes more flexible "Special Use Airspace" would add potential capacity to terminal area airspace systems particularly those along our coasts and southern borders.
- **Over time, all large metropolitan areas (especially if public policy allows sprawl to continue unchecked) will be served by multiple airport systems.**
 - Given the difficulty of adding real airfield capacity to mature and locked major airports, the focus of attention will shift towards increasing the number and the productivity of other existing airports that are used for extensive commercial service.
 - Airline alliance partners will likely serve only selected airports in large urban areas. The distribution of airlines among airports in Chicago, New York/Newark, Boston/Providence/Manchester and at San Francisco/Oakland reflects this trend.

CAPACITY

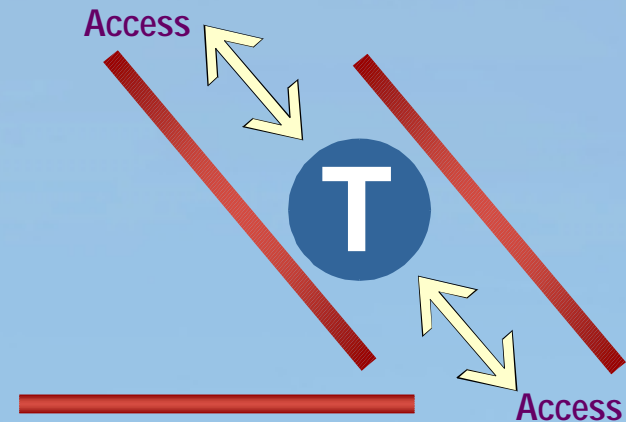
- **To conveniently serve demand mature land-locked airports in vital urban markets will have to be rebuilt. There is significant capacity locked in many of these facilities which began life as military fields. By using creative planning, technology advances and supportive government policy, many of these airports can be rebuilt on their existing sites.**
 - Many older airfield systems can be re-configured to increase capacity and air safety with no net increase in runways. See Exhibit VI.
 - Reconfiguring these airfields may also facilitate terminal/access system improvements. See Exhibit VII.
 - Emerging navigational technologies are providing opportunities to make airports less intrusive on surrounding communities by narrowing flight corridors and could reduce parallel runway separation requirements.
- **The Marketplace will adjust to the lack of capacity in those vital urban markets that refuse to take on the responsibility of adding capacity at their primary airports (it is their choice).**
 - Rather than use inconveniently located facilities – businesses and shippers will relocate longer term to market areas with more competitive air service;
 - Regional employment, population and income will shift long-term reducing air travel demand in urban areas where development does not happen.

Military “ Triangle” Configuration



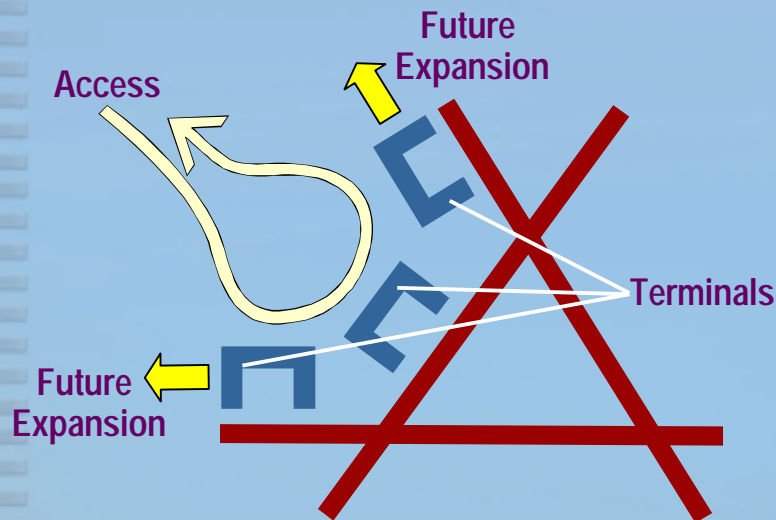
- High Wind Coverage
– Serves Turboprops
- Low Capacity
- Intersecting Runway Conditions
- Short Runways
- Single Roadway Access

Reconfigured Airfield



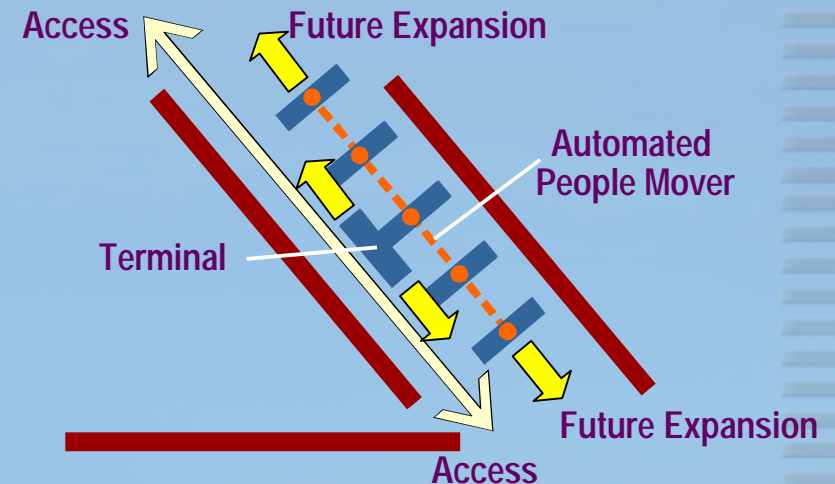
- Takes Advantage of New Technology – serves RJ's
- Parallel Runways
- Reduced Runway Intersections
- Minimum Runway Crossings
- Central Terminal Location
- Longer Runways

Military "Triangle" Configuration Terminal



- Single Ground Access Point
- Limited Gate Capacity
- Constrained Aircraft Apron and Taxiway Flows
- Limited Passenger Connectivity
- Typically Separated Unit, International and Domestic Facilities

Reconfigured Airfield Terminal



- Dual Ground Access Points
- Extensive Gate Capacity
- Dual Flow – Through Aircraft Apron Maneuverability
- Superior Runway to Apron Taxiway Flows
- Large Volume Passenger Connectivity
- Consolidated Domestic and International Facilities

TO ACCOMPLISH ADDING CAPACITY AT THOSE DIFFICULT URBAN MARKETS WHERE IT IS MOST NEEDED, REGULATORY AND POLICY CHANGES ARE REQUIRED. AMONG THE MOST BENEFICIAL WOULD BE:

- The FAA needs to get away from its first come first serve mentality on airways that have proven congestion problems. The FHWA's proven capacity planning/management concept of HOV lanes should be applied to the airway system and airport runways.
- Limited operating capacity airways and runways that serve severely congested urban area airports could be designated HOV, thereby increasing passenger handling capacity. One could have a 100-seat airway or a 250-seater or a 300-seat runway.
- Selectively abandoning first come first served would also provide an effective means for meaningful management of demand in multi-airport systems.
 - • It would become possible to effectively force service from one facility to another to meet regional needs. WITHOUT SUCH ABILITY REGIONAL PLANNING IS A LARGELY ESOTERIC EXERCISE.
 - • For instance, in LA if Southwest's short/medium haul O&D service constituting 11% of LAX passenger and aircraft activity could be shifted from LAX to Long Beach, Burbank, Ontario or a combination of these other airports, Southwest's 82,000 annual operations could be dedicated to international and long haul service. By doing so, LAX capacity could be increased by almost 20 million passengers annually (30% plus), gains exceeding the capacity increase expected from \$4 to \$5 billion of the planned improvements at that congested mega-airport.

With respect to enhancement of runway area safety at these mature major urban airports, the provisions of the National Environmental Policy Act (NEPA) are the single greatest impedent to expeditious completion of airport facility runway safety improvement projects.

- Adding 5 years or more to completion or precluding construction of safety improvements entirely.
- **THE INDUSTRY SHOULD PRO-ACTIVELY LOBBY CONGRESS TO EXEMPT MAJOR COMMERCIAL AIRPORT RUNWAY SAEFTY IMPROVEMENT PROJECTS FROM THE EIS REQUIREMENTS OF NEPA AT EXISTING AIRPORTS SERVING 1% OR MORE OF U.S. PASSENGER ENPLANEMENTS**, including projects to provide full runway safety areas and unobstructed clear zones; relocation of existing runway structures to achieve runway to runway or runway to parallel taxiway spacing which meets current industry design standards.
- **As it did previously with aircraft noise, the industry must develop a pro-active staged source reduction program for aircraft emissions. Air quality assessment of airport development projects in multi-airport regions' must be done on a total regional emissions basis or meaningful development will be stopped dead in its tracks.**
- **Lastly, using technology the industry virtually solved the aircraft noise problem at major urban airports over the last decade. But lack of reasonable land use controls allows shortsighted local interests to erode the gains. Airport land use zoning control with teeth is required to protect the industry's enormous investment.**